

## **Reducing the installation impact of submarine cables on eelgrass (*Zostera marina*): Details of a new technique.**

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Island communities within the San Juan Archipelago of Washington State depend on a network of submarine power and fiber optic cables maintained and operated by Orcas Power and Light Cooperative (OPALCO), a local member-owned, non-profit utility. However, commonly used equipment and techniques used during the installation of submarine cables can be damaging to nearshore habitats, especially the rooted, vascular plant, *Zostera marina* (eelgrass). These plants grow and reproduce on soft-bottom habitats that surround many of the islands in the county and their canopy structure and below ground anchoring systems provide an important array of ecological services for finfish, shellfish, invertebrates and waterfowl. As a consequence, protection is afforded this biome by county, state and federal regulatory agencies. If damage results, appropriate mitigation is required. Because OPALCO desires to practice environmental stewardship and mitigation measures can significantly add to the cost of submarine cable installation, efforts have been made to develop new modifications to installation techniques and equipment in order to avoid damage to eelgrass populations, or the soft-bottom habitats on which they grow. We now describe these equipment and techniques and report on the success of employing them to accomplish three cable installation projects undertaken in the fall of 2004.